

REMARKS

Claims 1, 3, 4, 6 through 10, 12 through 15, 18, 19, and 21 through 26 and new Claim 27 are pending in the application.

Claims 1 and 25 have been amended to reflect expedient inventive casings formed from a mixture of synthetic polymers that includes amide polymer and at least one further polymer. Support for this amendment can be found in the Application-as-filed, for example on Page 5, line 30 through Page 6, line 5.

Claim 3 has been amended to reflect advantageous embodiments in which inventive shirred food casings have a sigma-5 value (longitudinal/transverse, measured wet) of from 2/2 to 10/10 N/mm². Support for this amendment can be found in the Application-as-filed on Page 4, lines 30 through 32.

Claim 22 has been amended to delete the term "individual." Support for this amendment can be found in the Application-as-filed.

Claim 26 has been amended to correct a typographical error.

Claim 27 has been added to complete the record for examination and highlight advantageous embodiments of the invention.

Claim 27 is directed to beneficial food casings exhibiting a water vapor permeability of 200 to 1000 g/m² d determined as specified in DIN 53 122 at 23 °C. Support for this amendment can be found in the Application-as-filed, for example on Page 8, line 9 and Page 7, lines 5 through 7.

Reexamination and reconsideration of this application, withdrawal of all rejections, and formal notification of the allowability of the pending claims are earnestly solicited in light of the remarks which follow.

Claim Objection

Claim 26 stands objected to as failing to further limit the subject matter of its independent claim, i.e. Claim 1, as well as for grammatical informalities. Applicants respectfully submit that Claim 1 recites amide polymer consisting of aliphatic copolyamide including nylon 6/66 and/or nylon 6/12, thus Claim 1 remains open to further aliphatic copolyamide in addition to nylon 6/66 and/or nylon 6/12. In contrast, Claim 26 recites amide polymer consisting of nylon 6/66 and/or nylon 6/12, and is thus closed to aliphatic copolyamide other than nylon 6/66 and/or nylon 6/12. As kindly alluded to by the Examiner, Claim 26 concluded with a comma rather than a period. Applicants have amended Claim 26 to correct this typographical error. Accordingly, Applicants respectfully request withdrawal of the foregoing objection.

Section 112 Rejection

Claims 1 and 25 remain rejected over the recitation “water vapor permeability of 20 to 1000 g/m²” for failing to comply with the written description requirement. Applicants respectfully reiterate that the foregoing limitation fully satisfies the written description requirement, based on both its inherent and express disclosures. To satisfy the written description requirement, “the applicant does not have to utilize any particular form of disclosure to describe the subject matter claimed.” *In re Alton*, 76 F.3d 1168, 1172 (Fed. Cir. 1996). “[T]he Patent Act ... requires[s] only sufficient description to show one of skill in the ... art that the inventor possessed the claimed invention at the time of filing.” MPEP 2163.05 III (citing *Union Oil of Cal. v. Atlantic Richfield Co.*, 208 F.3d 989, 997, 54 USPQ2d 1227, 1232-33 (Fed. Cir. 2000)). Stated differently, the Applicant must only convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 19 USPQ2d 1111, 1117 (Fed. Cir. 1991).

To comply with the written description requirement, each claim limitation must be expressly, implicitly or inherently supported in the originally filed disclosure. MPEP 2163.05 With respect to changing numerical range limitations, the analysis must take into account which ranges one skilled in the art would consider inherently supported by the discussion in the initial

disclosure. MPEP 2163.05 III. In the decision *In re Wertheim*, ranges described in the original specification included a range of “25 – 60 %” and specific examples of “36%” and “50%”. A limitation to “between 35 % and 60%” was held to meet the description requirement. MPEP 2163.05 III (citing *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976)). As the Examiner will kindly note, Wertheim’s lower end point of “35 %” had no express support other than its inherent presence within a broader expressly supported range. The Court thus clearly indicated that at least all integer values within a broader numerical range that was expressly provided within a specification have either implicit or inherent support, thereby satisfying the written description requirement.

As correctly noted by the Examiner in the outstanding Office Action on Page 3, first partial paragraph, the Application-as-filed on Page 7, lines 4 through 7, provides express support for water vapor permeabilities ranging from 5 to 1000 g/m² d and 20 to 400 g/ m² d, inter alia. Applicants respectfully submit the recited range of 20 to 1000 g/ m² d thus derives both implicit or inherent and express support within the Application-as-filed, thereby clearly satisfying the written description requirement. In that regard, Applicants respectfully submit that at least all integer values between and including 5 and 1000 g/m² d are implicitly or inherently supported within the Application-as-filed, including the recited value of 20 g/ m², based upon *In re Wertheim*. Applicants further respectfully submit that the lower endpoint of 20 g/ m² d and upper endpoint of 1000 g/m² d are additionally expressly supported, i.e. explicitly stated, within the Application-as-filed. Accordingly, Applicants clearly conveyed with more than reasonable clarity to those skilled in the art that, as of the filing date sought, they were in possession of the claimed invention. Applicants thus respectfully request withdrawal of the foregoing rejection.

Claim 3 stands rejected over the recitation “to 10/10 N/mm²”. Without addressing the merits of the rejection and solely to advance prosecution of the above-referenced case, Claim 3 has been amended to reflect advantageous embodiments in which inventive shirred food casings have a sigma-5 value of from 2/2 to 10/10 N/mm², as kindly suggested by the Examiner. As noted above, support for this amendment can be found in the Application-as-filed. Accordingly, Applicants respectfully request withdrawal of the foregoing rejection.

Claim 22 stands rejected over a lack of antecedent basis for the term "individual." Without addressing the merits of the rejection and solely to advance prosecution of the above-referenced case, Claim 22 has been amended to delete the foregoing term. As noted above, support for this amendment can be found in the Application-as-filed. Accordingly, Applicants respectfully request withdrawal of the foregoing rejection.

*The Claimed Invention is Patentable
in Light of the Art of Record*

Claims 1, 3, 4, 8 through 10, 12, 13, 15, 18, 19, 21, 25 and 26 stand rejected over United States Patent No. 5,698,279 ("US 279") to Vicik in view of United States Patent No. 6,203,750 ("US 750") to Ahlgren et al. Claims 6, 7, 14 and 24 stand rejected over the foregoing references and further in view of United States Patent Application Publication No. 2004/0191368 ("US 368") to Mori. Claim 23 stands rejected over the foregoing references and in further view of United States Patent No. US 5,616,418 ("US 418") to Vasselin et al. Claim 22 stands rejected as being anticipated by United States Patent No. 4,391,302 ("US 302") to Huhn et al.

It may be useful to briefly consider the invention before addressing the merits of the rejection.

Applicants respectfully reiterate that food casings, especially sausage casings, are predominantly offered in shirred form. Cellulose-based shirred casings are generally known. Shirred sticks formed from synthetic polymers are also known; however, such shirred sticks are generally not very stable without net-type or reinforcing packaging. Heretofore known synthetic polymer-based casings exhibit a relatively high resilience, resulting in the re-expansion of the shirred stick and associated pleat loss. (In that regard, the Examiner's attention is kindly directed to the Application-as-filed on Page 2, lines 1 through 14, as well as US 834, Para. 0016, fifth sentence). Commercially available shirred sticks formed from synthetic polymers are thus produced and subsequently provided on a tube made of metal or plastic and/or the shirred stick is surrounded by a tight film or net packaging.

In addition to shirred pleat stability, polymer-based food casings should advantageously provide a balance of additional properties, including only modest bending of the shirred tube (thereby avoiding the conventional external reinforcement) and acceptable water vapor permeability.

Unexpectedly, Applicants have found synthetic polymer blends that may be used to form food casings exhibiting a heretofore unknown balance of beneficial properties, including shirred stick stability, advantageous tensile properties and water vapor permeability.

Applicants have more particularly found that food casings formed from a particular mixture of "soft" polymers that includes aliphatic copolyamide and at least one further polymer selected from the group consisting of ionomers, ethylene/(meth)acrylic acid esters, polyurethanes, copolyesters, biodegradable polyesters, and water-soluble polymer provides a highly advantageous balance of adequate stiffness, shirr stability and water vapor permeability, as recited in the claimed invention.

Specifically, Applicants have found that polymer mixtures including (i) amide polymer consisting of aliphatic copolyamide that includes nylon 6/6 and/or nylon 6/12 and (ii) at least one further polymer selected from the group consisting of ionomers, ethylene/(meth)acrylic acid esters, polyurethanes, copolyesters, biodegradable polyesters, and water-soluble polymer can be used to form intrinsically stable shirred food casings that bend under the effect of their own weight by no more than 20 % and exhibits a water vapor permeability of 20 to 1000 g/m² d.

Applicants have further determined that a specific shirring configuration, i.e. a targeted shirring pleating, imparts particularly high insensitivity to bending and folding stress within inventive casings formed from the claimed polymer composition. In such targeted shirring pleating, particularly the recited overlapping pleats, the resulting increased contact surface area and frictional surface area enlargement translates into greater intrinsic shirr stability. In that regard, the Examiner's attention is kindly directed to the Application-as-filed on Page 4, lines 10 through 18.

In additional advantageous embodiments, the inventive shirred casing further comprises at least one of (i) an outer coating of oil or water and (ii) an outer surface tension of 40 to 50 mN/m imparted by corona treatment increasing the adhesion of the individual shirred pleats to one another, resulting in a shirred casing extends in the longitudinal direction by no more than 10% when it is stored on a smooth, planar support, without packaging, at room temperature and 60 % relative humidity, as recited in Claim 22.

Applicants respectfully submit that the newly cited references similarly fail to teach or suggest the claimed invention.

US 279 is generally directed to biaxially oriented, shrinkable, multilayered, tubular food casing. In contrast to the recited casings formed from polymer mixtures, the multilayered casings of US 279 incorporate discrete layers containing separate polymer families, specifically a functionalized polyethylene core layer disposed between inner and outer polyamide layers. (Col. 6, lines 56 - 66). In fact, US 279 expressly teaches that its separate layers ensure that the properties of the polyamide layers are “not impaired,” in contrast to films that seek to obtain functions by blending polymers. (Col. 9, lines 10 – 15). US 279 goes on to refer to its provision of such distinct inner and outer layers, respectively formed from functionalized polyethylene and polyamide, as a “fundamental concept” of its invention. (Col. 9, lines 24 – 26). US 279 further refers to the layers as “[t]hese three essential layers.” (Col. 8, lines 8 – 9).

The core layer comprises at least 60 % by weight of at least one functionalized polyethylene . (Col. 6, lines 57 – 64). The functionalized polyethylene is preferably an ethylene/(meth)acrylic acid ester copolymer. (Col. 12, lines 20 – 27). US 279 teaches that the functionalized polyethylene core layer imparts good shirrability, as well as water vapor barrier. (Col. 9, lines 7 – 10). US 279 additionally indicates that the core layer protects the outer polyamide layer from “excessive moisture migration from encased foodstuffs.” (Col. 11, lines 14 – 18). US 279 generically notes that its casings can be conventionally shirred. (Col. 30, lines 1 – 3). US 279 indicates that its casings preferably have a water vapor permeability of less than 75 g/m²d. (Col. 14, lines 37 – 40). Illustrative working examples of US 279 have a water vapor permeability of about 40 to 50 g/m²d. (Table 2, Examples 8 - 10).

US 279, requiring discrete layers containing separate polymer families, does not teach or suggest the inventive food casings consisting essentially of a mixture of synthetic polymers, much less such mixtures including amide polymer, as recited in the claims as-amended. In fact, US 279 generally teaches away from polymer mixtures, and specifically cautions against polyamide mixtures to ensure that the properties of the polyamide are “not impaired.”

And US 279 cannot teach or suggest the inventive mixture of polymers including (i) amide polymer and (ii) at least one further polymer selected from the group consisting of ionomers, ethylene/(meth)acrylic acid esters, polyurethanes, polyether block amides, copolyesters, biodegradable polyesters, and water-soluble polymers. US 279 instead requires polyamide and functionalized polyethylene, present within separate layers.

Nor does US 279 teach or suggest that inventive intrinsically stable shirred food casings formed from a mixture of polymers including (i) amide polymer consisting of aliphatic copolyamide, and (ii) at least one further polymer selected from the group consisting of ionomers, ethylene/(meth)acrylic acid esters, polyurethanes, polyether block amides, copolyesters, biodegradable polyesters, and water-soluble polymers, would exhibit sufficient intrinsic stability to be processed on fully automatic stuffing machines, as further recited in Claims 1 and 25. US 279 instead teaches its functionalized polyethylene core as required for good shirrability. Applicants respectfully submit that the Office Action’s urgings on Page 5, first full paragraph as to the intrinsic stability of US 279 is purely conjecture. Applicants further respectfully submit that such conjecture, based upon a multilayered film having a functionalized polyethylene core layer, may not be imputed to the inventive films formed from polymer mixtures.

US 279 similarly fails to teach or suggest that intrinsically stable shirred food casings formed from the inventive polymer mixture would bend under the effect of their own weight by no more than 20 %. Applicants respectfully submit that the Office Action’s urging on Page 5, first full paragraph as to the bending behavior of US 279 is merely a conclusory statement. Applicants further respectfully submit that such statement, based upon a multilayered film having a functionalized polyethylene core layer, may not be imputed to the inventive films.

US 279 similarly fails to teach or suggest that the recited mixture of synthetic polymers would result in shirred food casings having a sigma-5 value (longitudinal/transverse, measured wet) of from 2/2 to 10/10 N/mm², as recited in Claim 3 as-amended. Applicants further respectfully submit that the foregoing properties are not inherently present within US 279, in contrast to the urgings within the outstanding Office Action on Page 7, second full paragraph. In that regard, Applicants respectfully submit that the claimed food casings, formed from a mixture of polymers comprising (i) amide polymer consisting of aliphatic copolyamide and (ii) at least one further polymer selected from the group consisting of ionomers, ethylene/(meth)acrylic acid esters, polyurethanes, polyether block amides, copolyesters, biodegradable polyesters, and water-soluble polymer, do not have a “substantially similar structure” or “chemical composition” to US 279. Specifically, the structure of US 279 clearly requires discrete layers containing separate polymer families and the chemical composition of US 279 requires the presence of functionalized polyethylene.

US 279 thus likewise fails to teach or suggest that inventive casings formed from the recited polymer mixture would, after shirring, extend in the longitudinal direction by no more than 15 % when stored on a smooth planar support at room temperature and 60 % rh, as recited in Claim 4, in contrast to the urgings to the contrary in the outstanding Office Action on Page 7, second full paragraph and based upon the considerable dissimilarities between the claimed invention and the structure and chemical composition of US 279.

US 279 also fails to teach or suggest that the inventive food casings formed from the recited polymer mixture would extend in the longitudinal direction by no more than 10 % when stored on a smooth planar support at room temperature and 60 % rh after shirring, as recited in Claim 18, in contrast to the urgings to the contrary in the outstanding Office Action on Page 8, fourth full paragraph and based upon the considerable dissimilarities between the claimed invention and the structure and chemical composition of US 279.

US 279 similarly fails to teach or suggest that the inventive shirred food casings formed from the recited polymer mixture would bend under the effect of its own weight by no more than 5 %, as recited in Claim 19, in contrast to the urgings to the contrary in the outstanding Office Action on Page 8, last partial paragraph.

The considerably different physical structure and chemical composition of US 279 additionally fails to teach or suggest that inventive casings formed from the recited polymer mixture would bend under the effect of its own weight by no more than 20 %, exhibit a water vapor permeability of 20 to 1000 g/m² d, and have a sigma-5 value (longitudinal/transverse, measured wet) of below 20/20 N/mm², as recited in Claim 25, in contrast to the conclusory statements to the contrary in the outstanding Office Action on Page 9, last partial paragraph.

And US 279 cannot teach or suggest such casings exhibiting a water vapor permeability of 200 to 1000 g/m² d determined as specified in DIN 53 122 at 23 °C, as recited in newly added Claim 27. US 279 instead teaches that its casings have a water vapor permeability of less than 75 g/m²d, as correctly noted by the Examiner in the outstanding Office Action on Page 10, first partial paragraph.

Accordingly, Applicants respectfully submit that the claimed invention is patentable in light of US 279, considered either alone or in combination with the remaining art of record.

US 750 does not cure the deficiencies in US 279.

Applicants respectfully reiterate that US 750 is directed to multilayered heat shrinkable casings suitable for cook-in use. (Col. 2, lines 5 – 7). The films of US 750 include a layer having a mixture of at least two polyamides having differing crystalline structures, which is said to allow orientation via hot water or steam, along with at least one polyolefin layer. (Col. 2, lines 7 - 12; Col. 2, lines 17 – 29; Col. 5, lines 1 – 5, and Col. 16, lines 10 – 18). US 750 specifically indicate its impetus is that a layer of “predominantly nylon 6” can be readily oriented by adding a “secondary” polyamide. (Col. 16, lines 10 – 18). US 750 generically notes that apparatus for producing shirred casings are “known” for preparing “pleated and compressed” casings. (Col.

14, lines 58 – 61). US 750 indicates compression ratios of 40:1 as acceptable, noting that the compression ratio may be “even greater.” (Col. 14, lines 58 – 63). US 750 merely generically notes that various of its working examples were “shirred.” (Col. 19, lines 46 – 47 and Col. 20, lines 20 – 21). US 750 further notes that the shirred casing may be sheathed inside “a retaining sleeve.” (Col. 13, lines 27 – 28). Evidencing conventional wisdom, US 750 teaches that copolymers are “formed by the polymerization of at least two different monomers.” (Col. 8, lines 11 – 13). US 750 further teaches that polymer names including a backslash, i.e. “/”, identifies comonomers used to produce the copolymer. (Col. 8, lines 51 – 54).

Applicants respectfully reiterate that US 750, generally directed to nylon 6-based films, does not teach or suggest advantageous food casings formed from amide polymer consisting of copolyamide, much less nylon 6/66 and/or nylon 6/12 copolyamide, as recited in Claims 1 and 25. In that regard, Applicants respectfully submit that to modify US 750 so as to avoid its required nylon 6 would altogether change its principle of operation.

Nor does US 750 teach or suggest that inventive food casings excluding polyamide, would, without separate support, exhibit sufficient intrinsic stability to be processed on fully automatic stuffing machines, as recited in Claims 1 and 25.

US 750 thus cannot teach or suggest that the inventive shirred food casings would bend under the effect of its own weight by no more than 20 % in the absence of its required polyamide, as further recited in Claims 1 and 25.

And US 750, generically noting shirring, most certainly does not teach or suggest that such food casings with overlapping shirring pleats would produce food casings having improved intrinsic stability, as reflected within the claims as-amended. In that regard, Applicants respectfully submit that US 750’s generic reference to “shirring” does not teach or suggest the recited overlapping shirring pleats, in contrast to the urgings within the outstanding Office Action on Page 6, first full paragraph and second partial paragraph.

US 750, requiring at least two polyamides, similarly fails to teach or suggest casings formed from a mixture containing a single co-polyamide, much less a single copolyamide combined with polyether block amide and partially or completely saponified polyvinylacetate, as recited in Claim 23. Applicants respectfully submit that to modify US 750 so as to avoid both its required nylon 6 polyamide and secondary polyamide would clearly render it unfit for its intended purpose.

US 750 likewise fails to teach or suggest inventive food casings formed from (i) amide polymer consisting of nylon 6/66 and/or nylon 6/12, and (ii) at least one further polymer selected from the group consisting of ionomers, ethylene/(meth)acrylic acid esters, polyurethanes, polyether block amides, copolyesters, biodegradable polyesters, and water-soluble polymers, as recited in Claim 26. Applicants similarly respectfully submit that to modify US 750 so as to avoid both its nylon 6 and polyamide mixture would clearly render it unfit for its intended purpose.

Accordingly, Applicants respectfully reiterate that the claimed invention is patentable in light of US 750, considered either alone or in combination with the remaining art of record.

Applicants respectfully reiterate that there would have been no motivation to have combined the cited references. US 279 is directed to casings incorporating discrete layers containing separate polymer families, specifically a functionalized polyethylene core layer disposed between inner and outer polyamide layers. US 750 is directed to films formed from a mixture of polyamides that may be oriented using hot water or steam.

However, even if Applicants had combined US 279 and US 750 (which they did not) the present invention would not have resulted. Specifically, none of the cited references teaches or suggests the particular recited synthetic polymer mixtures, much less that intrinsically stable casings could be formed from the recited synthetic polymer mixtures via overlapping shirring pleats. The cited references each clearly teach the use of altogether different polymers to form casings, and in no way teach or suggest the use of overlapping shirring pleats.

More specifically, the combination simply does not teach or suggest advantageous food casings formed from amide polymer consisting of aliphatic copolyamide, much less nylon 6/66 and/or nylon 6/12 copolyamide within a polymer mixture, as recited in the claims as-amended. Applicants respectfully submit that to alter US 750 so as to avoid its required polyamide (i.e. “predominantly nylon 6”) would altogether change its principle of operation. Applicants further respectfully submit that to alter US 279 so as to incorporate the recited polymer mixtures in lieu of its required distinct polymer layers would similarly render it unfit for its intended purpose (based upon the teachings of US 279).

Nor does the combination teach or suggest that inventive food casings formed from polymer mixtures of amide copolymer and enumerated polymers would, without separate support, exhibit sufficient intrinsic stability to be processed on fully automatic stuffing machines, as recited in Claims 1 and 25. US 279 clearly teaches that its functionalized polyethylene layer is required to impart shirring properties. US 750 clearly teaches that nylon 6 is required.

The combination thus cannot teach or suggest that the inventive shirred food casings would bend under the effect of its own weight by no more than 20% in the absence of polyamide, as further recited in Claims 1 and 25.

And the combination most certainly does not teach or suggest that food casings formed from the recited polymer mixture that further incorporate overlapping shirring pleats would produce food casings having improved intrinsic stability, as reflected within the claimed invention. Both US 279 and US 750 teach considerably different polymer compositions and both are silent as to overlapping shirring pleats.

Nor does the combination teach or suggest casings formed from a mixture of a single copolyamide, much less a single copolyamide combined with polyether block amide and partially or completely saponified polyvinyl acetate, as recited in Claim 23. US 750 requires the presence of two amide polymers, while US 279 requires a functionalized polyethylene layer.

The combination likewise fails to teach or suggest inventive food casings formed from (i) amide polymer consisting of nylon 6/66 and/or nylon 6/12, and (ii) at least one further polymer selected from the group consisting of ionomers, ethylene/(meth)acrylic acid esters, polyurethanes, polyether block amides, copolyesters, biodegradable polyesters, and water-soluble polymers, as recited in Claim 26. Applicants respectfully reiterate that to modify US 750 so as to avoid its required nylon 6 would altogether change its principle of operation.

And the combination cannot teach or suggest such casings exhibiting a water vapor permeability of 200 to 1000 g/m² d determined as specified in DIN 53 122 at 23 °C, as recited in newly added Claim 27. US 279 instead teaches that its casings have a water vapor permeability of less than 75 g/m²d.

Accordingly, Applicants respectfully submit that the claimed invention is patentable in light of US 279 and US 750, considered either alone or in any combination with the remaining art of record.

Claims 6, 7, 14 and 24 are similarly patentable in further light of US 368.

US 368 is directed to smokeable casings formed from a mixture of crosslinked polyvinylpyrrolidone and thermoplastic resin. [Para. 0009 and Para. 0017]. The thermoplastic resin is preferably nylon 6 or a copolymer of nylon 6 and nylon 6,6. [Para. 0009 and Para. 0019]. The working examples include either nylon 6 or a copolymer of nylon 6 and nylon 6,6. [Paras. 0026 – 0029]. The casings are characterized by moderate permeability to water vapor and moderate impermeability to oxygen. [0024].

US 368 does not teach or suggest shirrability, much less that intrinsically stable shirred food casings could be formed a mixture of synthetic polymers that includes (i) amide polymer consisting of aliphatic copolyamide and (ii) at least one further polymer.

And US 368 most certainly does not teach or suggest such food casings compressed in a ratio of 100:1 or more with overlapping shirring pleats.

Accordingly, Applicants respectfully submit that US 368 does not teach or suggest the claimed invention.

US 279 and US 750 do not teach or suggest the claimed invention, based upon the reasoning provided above.

There would have been no motivation to have combined US 279, US 750 and US 368. However, even if one had combined US 279, US 750 and US 368 (which Applicants did not do), the claimed invention would not have resulted.

The combination specifically does not teach or suggest that intrinsically stable shirred food casings could be formed a mixture of synthetic polymers that includes (i) amide polymer consisting of aliphatic copolyamide and (ii) at least one further polymer, as recited in the claimed invention.

And the combination most certainly does not teach or suggest that food casings formed from the recited compositions compressed in a ratio of 100:1 or more with overlapping shirring pleats would exhibit intrinsic shirr stability.

Accordingly, Applicants respectfully submit that Claims 6, 7, 14 and 24 are similarly patentable in light of the combination of US 279, US 750 and US 368.

Claim 23 is likewise patentable in further light of US 418.

US 418 is directed to polyblend composition that includes at least one thermoplastic elastomer based on a polyamide and at least one modified polyolefin, which may be used to produce a "wide variety of useful shaped articles." (Col. 1, lines 19 – 24 and Col. 1, lines 39 – 41). Suitable elastomeric polyamides include polyesteramides. (Col. 1, lines 56 – 57). The modified polyolefin is formed from ethylene or alpha-olefin monomer and a carboxylic acid. (Col. 2, lines 40 – 50). Articles are produced from the compositions of US 418 "by known molding and extrusion techniques." (Col. 3, lines 50 – 55). US 418 further broadly notes that its

compositions are suitable for use in a number of packaging applications. (Col. 4, lines 14 – 16). US 418 notes with particularity the suitability of its compositions in composites for water skis and the like. (Col. 4, lines 49 – 56).

US 418, requiring modified polyolefin, likewise fails to teach or suggest the inventive casings formed from a synthetic polymer mixture consisting of (i) a single copolyamide; (ii) polyether block amide; and (iii) water-soluble polymer, wherein the water-soluble polymer is partially or completely saponified polyvinylacetate, as recited in Claim 23. In fact, Applicants respectfully submit that to modify US 418 so as to avoid its required modified polyolefin would render it unfit for its intended purpose.

US 279, US 750 and US 368 do not teach or suggest the claimed invention, based upon the reasoning provided above.

There would have been no motivation to have combined US 279, US 750, US 368 and US 418. However, even if one had combined US 279, US 750, US 368 and US 418 (which Applicants did not do), the claimed invention would not have resulted.

The foregoing combination particularly does not teach or suggest the inventive casings formed from a synthetic polymer mixture consisting of (i) a single copolyamide; (ii) polyether block amide; and (iii) water-soluble polymer, wherein the water-soluble polymer is partially or completely saponified polyvinylacetate, as recited in Claim 23. In fact, Applicants respectfully submit that to modify US 418 so as to avoid its required modified polyolefin would render it unfit for its intended purpose. Likewise, to modify US 279 so as to avoid its required functionalized polyethylene would render it unfit for its intended purpose. Similarly, to modify US 750 so as to avoid its required amide polymer blend would render it unfit for its intended purpose.

And the combination most certainly does not teach or suggest that food casings formed from the recited compositions compressed in a ratio of 100:1 or more with overlapping shirring pleats would exhibit intrinsic shirr stability.

Accordingly, Applicants respectfully submit that Claim 23 is patentable in light of the combination of US 279, US 750, US 368 and US 418.

Claim 22 is not anticipated by US 302.

US 302 is directed to coupled tubular casings formed from regenerated cellulose. (Col. 1, line 4 and Col. 3, lines 1 - 4). US 302 joins two casings by angling the ends of two tubular casings and joining them end-to-end via a flat coupling piece. (Col. 2, lines 38 - 44). The coupling piece may include a multilayered sealing foil that may be formed from any of a number of polymers. (Col. 3, lines 12 - 26). A working example US 302 was subjected to corona treatment to increase its surface energy prior to coating with an initial bonding agent that was applied to provide adhesion to a subsequent polyvinylidene chloride copolymer top coat. (Col. 6, lines 44 - 59). US 302 notes that its inventively coupled casings have a rigidity value, specifically a "Rigidity S wet Average value", of 47. (Col. 8, lines 11 - 45).

Applicants respectfully submit that US 302, directed to regenerated cellulose casings, can not anticipate the inventive food casings consisting essentially of synthetic polymers.

US 302, merely noting a rigidity value resulting from its coupling configuration, further does not teach or suggest the recited corona treatment imparting an outer surface tension of 40 to 50 mN/m.

And US 302, merely noting surface treatment prior to coating with a bonding agent, most certainly does not teach or suggest the claimed corona treatment to increase the adhesion of the shirred pleats to one another, as additionally recited in Claim 22. Considered for all that it teaches, US 302 instead clearly suggests use of a bonding agent for improved adhesion, not corona treatment.

Accordingly, Applicants respectfully submit that US 302 does not teach or suggest the claimed invention, considered either alone or in combination with any or all of the art of record.

CONCLUSION

It is respectfully submitted that Applicants have made a significant and important contribution to the art, which is neither disclosed nor suggested in the art. It is believed that all of pending Claims 1, 3, 4, 6 through 10, 12 through 15, 18, 19, and 21 through 27 are now in condition for immediate allowance. It is requested that the Examiner telephone the undersigned if any questions remain to expedite examination of this application.

It is not believed that extensions of time or fees are required, beyond those which may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time and/or fees are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required is hereby authorized to be charged to Deposit Account No. 50-2193.

Respectfully submitted,

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